DOI 10.1007/s10553-017-0845-z
Chemistry and Technology of Fuels and Oils, Vol. 53, No. 5, November 2017 (Russian Original No.5, September – October, 2017)

TECHNOLOGIES

JOINT THERMAL TREATMENT OF HEAVY OIL AND LIQUID PRODUCTS OF FAST WOOD PYROLYSIS FOR PRODUCING FUELS AND CHEMICALS

A. N. Grachev,[1,2] M. A. Varfolomeev,[1] D. A. Emel'yanov,[1] S. A. Zabelkin,[1,2] M. F. Gilfanov,[2] and R. A. Nuriyakhmetov[2]

Joint thermal treatment of heavy oil and liquid products of fast wood pyrolysis is investigated. Thermal analysis shows that the coke yield does not increase if the liquid products are added up to 20 mass%. The liquid wood-pyrolysis products decompose much earlier than heavy oil. However, the decomposition of the blends is essentially the same as pure-oil decomposition.
Keywords: *heavy oil, cracking, biomass, fast pyrolysis, pyrolysis liquid.*

Oil and its refined products are currently the main feedstocks for producing fuels and chemicals. However, it seems interesting to incorporate nontraditional hydrocarbon sources, alternative resources, and renewable feedstocks into petrochemical production to diversify the feedstock base. Furthermore, use of renewable resources in energy is a promising direction.

Heavy oil, reserves of which are already significantly greater than those of traditional oil, is a potential resource for producing petrochemicals and energy. The amounts in Russia alone reach several billion tons [1, 2]. Heavy oils feature high contents of asphaltenes, resins, and other high-molecular-mass compounds with high S and O contents that are responsible for its high viscosity. Therefore, the transportation and refining of heavy oil is a complicated problem [3, 4].

[1]Kazan' (Volga Region) Federal University, Kazan', Russia. [2]Kazan' National Research Technological University, Kazan', Russia. *E-mail: mikhail.varfolomeev@kpfu.ru.* Translated from *Khimiya i Tekhnologiya Topliv i Masel*, No. 5, pp. 6-10, September-October, 2017.

